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Benha University **Second surveying**

Sheet No. (1)

1- Why are the curves provided? Explain with sketches the different types of curves.

2- What are the elements of a simple circular curve? Explain in detail how a simple curve in designated?

3- Two straights intersect at change (150+16) with an angle of intersection of 140° calculate the changes of the tangent points a 5° right handed curve.

4- Two straights intersect at change (512+26) the angle of deflection is 20° calculate the changes of the tangent points of 400m radius right handed curve.

5- Two straights BA and CA intersect at point A. point A falls in the bed of a river. It is desired to connect these two straights by a simple curve of 6° to do this a line PQ connecting these two tangents at points P and Q respectively is measured to be 200m, the angle BPQ= 115° and angle CQP= 145°, change of point P is (119+2) chains from the station point. Find the changes of tangents and the length of the curve.

Sheet No. (2)

1- Calculate the offsets at 15m intervals along the tangents to locate a simple circular curve of 300m radius.

2- Calculate the offsets at 20m intervals along the tangents to locate a simple circular curve of 200m radius.

3- Two straights intersect at change (120+16) with an angle of intersection of 160° calculate the changes of the tangent points a 5° right handed curve and Calculate the offsets at 20m intervals along the tangents

4- Calculate all the data necessary to set out right handed simple circular curve of 500 mt radius and the angle of intersection is 162° by the method of successive bisection of area.

5- Calculate all the data necessary to set out right handed simple circular curve of 400 mt radius and the angle of intersection is 150° by the method of successive bisection of area.

6- Two straights intersect at change (112+18) with an angle of intersection of 140° calculate the changes of the tangent points a 7° right handed curve and Calculate all the data necessary to set out right handed simple circular curve by the method of successive bisection of area.

Banha University
Shoubra Faculty Of Engineering

Second Surveying
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Assignment (3)

1- Calculate the ordinates from the long chord at 10 m interval to set out a simple circular curve of 10°.The length of the long chord 100 m.

2- Calculate the ordinates from the long chord at 10 m interval to set out a simple circular curve of radius 200 m. The length of the long chord 100 m.

3- Two straights AB and BC intersect at chainage (125+12). The angle of intersection is 140°. It is required to set out a 6° simple circular curve to connect the two straights. Calculate all the data necessary to set out the curve by the method of offsets from the chords produced with a peg interval 20m.

4- Two straights AB and BC intersect at chainage (127+12). The angle of intersection is 140°. It is required to set out a 5° simple circular curve to connect the two straights. Calculate all the data necessary to set out the curve by the method of offsets from the chords produced with a peg interval 30m.

5- The straights intersect at chainage (80 + 07). The deflection angle is 12°. Calculate all the data necessary for setting out a 4° simple circular curve by the method of deflection angles. The peg interval may be taken as 20 m. given the table of deflection angles.

6- The straights intersect point of the tangents is (268+10). The deflection angle is 9°. It is desired to join them with a 3° left handed curve. Find the chainages of the beginning and end points of the curve and give the table of deflection angles for every chain length along the curve.

Sheet No. (4)

1- Define a compound curve. What are the characteristics of a compound curve?

2- Two straights AB and BC are intersected by a line LM. Angles ALM and LMC are 105° and 110° respectively. The radius of the first arc of the curve is 16 chains and that of the second arc is 10 chains. The chainages of the intersection point B is (212+14). Find out the chainages of the first and second tangent point of the compound curvature.

3- Two roads AB and BC intersect at chainage (615+15). These are intersected by a line PQ and the angles, APQ and PQC are 112° and 102° respectively. The radius of the first arc of the curve is 11 chains and that of the second arc is 18 chains. Calculate the chainages of the first and second tangent point of the compound curvature

4- A railway siding is to be curved through a right angle and in order to avoid building the curve is to be compound and the radii of the two branches are 240m and 360m. the distance from the intersection point of the end straights the tangent point at which 240m radius curve leaves the straights is 302m. obtain the second tangent length and the length of the whole curve.